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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/152,266	09/14/1998	ERIC R. CAMPBELL	540-127	8971

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EXAMINER

PHAM, THOMAS K

ART UNIT

PAPER NUMBER

2121

DATE MAILED: 05/12/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/152,266

Applicant(s)

CAMPBELL ET AL.

Examiner

Thomas K Pham

Art Unit

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 1998.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6-9, and 11-21 is/are rejected.
- 7) ☒ Claim(s) 2-5 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 & 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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Notice to Applicant(s)

1. Claims 1-21 of U.S. Application 09/152266 filed on 09/14/1998 are presented for examination.
2. Because of the written format and the claim language, applicant has been charged for claim 18 and claim 19 as independent claims.

DETAILED ACTION

Specification

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.
- (e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:

- (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
- (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (h) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet (37 CFR 1.52(b)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).

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- (j) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (k) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Claim Objections

- 3. Claim 2 is objected to because of the following informalities: spelling on the word “realises”. Appropriate correction is required.
- 4. Claim 21 is objected to because of the following informalities: the word “either” should be deleted and “claims” should change to “claim”. Appropriate correction is required.

Claim Rejections - 35 USC § 102

- 5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- 6. Claims 1, 6-9, and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Jennings et al. U.S. Patent No. 4,796,178 (hereinafter Jennings).

7. As for claim 1, Jennings shows an integrated circuit, for use as a scheduler of activities to be run on an associated central processor (fig. 1, element 10), the circuit being configured to support a "control node" mechanism (fig. 1, element 13) by incorporating means for holding at least one pair of control variables comprising a "stim-wait" channel corresponding to each of said activities (col. 6 line 30) and further incorporating next activity selection logic for identifying those activities which are ready for running on the processor, depending on the status of said control variables (col. 6 lines 31-34).

8. As for claim 6, Jennings shows an integrated circuit as claimed in claim 1 including means for setting those control variables comprising a "stim-wait" channel in response to a signal received from an associated processor (col. 7 lines 51-53).

9. As for claim 7, Jennings shows an integrated circuit as claimed in claim 1 including means for setting those control variables comprising a "stim-wait" channel in response to a signal received from an associated peripheral device (col. 9 lines 1-5).

10. As for claim 8, Jennings shows an integrated circuit as claimed in claim 1 including means for setting those control variables comprising a "stim-wait" channel in response to a signal received from a second integrated circuit as described and claimed herein (col. 3 lines 27-34).

11. As for claim 9, Jennings shows an integrated circuit as claimed in claim 1 including means for temporarily inhibiting any changes to control variables from entering the next-activity-selection logic (col. 9 lines 8-10).

12. As for claim 13, Jennings shows an integrated circuit as claimed in claim 1 and including means for detecting when a schedulable activity has a higher priority than that activity currently

running on an associated central processor and thereby generating an interrupt signal (col. 11 lines 64-68).

13. As for claim 14, Jennings shows an integrated circuit as claimed in claim 1 and incorporating a counter circuit (col. 10 lines 41-43).

14. As for claim 15, Jennings shows an integrated circuit as claimed in claim 1 configured for asynchronous operation, by incorporating level-driven, clock-free ripple logic (col. 11 lines 50-61).

15. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Jennings. Jennings shows a processing network comprising a central processing unit for running a plurality of activities and a scheduler of activities linked to the processing unit via a data bus in which said scheduler comprises an integrating circuit in accordance with claim 1 (col. 4 lines 32-54).

16. Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by Jennings. Jennings shows a processing network comprising a control processing unit for running a plurality of activities, a scheduler of activities and a peripheral device, in which said scheduler comprises an integrating circuit in accordance with claim 1 (col. 4 lines 32-54) and in which the scheduler further includes means for setting at those control variables comprising a "stim-wait" channel in response to a signal received from said peripheral device (fig. 1 and col. 6 line 30).

17. Claims 19-21 is rejected under 35 U.S.C. 102(b) as being anticipated by Jennings.

18. As for claim 19, Jennings shows a multiprocessor network comprising a plurality of central processing units (fig. 1, element 10), each being linked to an associated scheduler and each scheduler being linked to adjacent schedulers in which each of said schedulers comprises an integrating circuit in accordance with claim 1 (col. 4 lines 32-54).

19. As for claim 20, Jennings shows a multiprocessor network as claimed in claim 19 in which at least one of said schedulers includes means for setting those control variables comprising a "stim-wait" channel in response to a signal received from an adjacent scheduler (col. 6 lines 35-43).

20. As for claim 21, Jennings shows a multiprocessor network as claimed in claim 20 and further including a peripheral device linked to a scheduler, in which the scheduler includes means for setting those control variables comprising a "stim-wait" channel in response to a signal received from said peripheral device (col. 9 lines 1-5). Reference indicated that any of the processors connected to the memory controllers including the I/O processor (peripheral) is capable of performing the task controlling process.

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jennings in view of Bass et al. U.S. Patent No. 5,487,170 (hereinafter Bass).

23. As for claim 11, Jennings does not specifically show an integrated circuit as claimed in claim 1 in which the next-activity-selection logic includes means for selecting the next activity to be run on a round robin basis. However, Bass shows an data processing system in which the next-activity-selection logic includes means for selecting the next activity to be run on a round robin basis (col. 7 lines 19-24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the round robin basis of Bass to the task control mechanism of Jennings because it would provide for assuring that each task will have access to system resources.

24. As for claim 12, Jennings does not specifically show an integrated circuit as claimed in claim 1 in which the next activity selection logic includes means for allocating differing priority levels to groups of activities, and for selecting the next activity to run within a group on a round robin basis within that group. However, Bass shows a data processing system in which the next activity selection logic includes means for allocating differing priority levels to groups of activities, and for selecting the next activity to run within a group on a round robin basis within that group (col. 7 lines 25-37). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the round robin basis of Bass to the task control mechanism of Jennings because it would provide for assuring that each task will have access to system resources.

25. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jennings. Jennings does not specifically show an integrated circuit as claimed in claim 1 and being fabricated using CMOS techniques. "Official Notice" is taken that both the concept and

advantages of fabricated the integrated circuit using CMOS techniques is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to include the fabrication of the integrated circuit using CMOS techniques to the task control mechanism of Jennings because it would provide for low power consumption or essentially zero when the circuit elements are not being clocked or changing level.

Allowable Subject Matter

26. Claims 2-5 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Thomas Pham; whose telephone number is (703) 305-7587 and fax number is (703) 746-8874. The examiner can normally be reached on Monday-Friday from 7:30AM- 4:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, *John Follansbee*, can be reached on (703) 305-8498 or via e-mail addressed to [*joh.follansbee@uspto.gov*]. The fax number for this Group is (703) 308-5403.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [**thomas.pham@uspto.gov**].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Thomas K. Pham
Patent Examiner

tp
May 2, 2003

Ramesh Patel
RAMESH PATEL
PRIMARY EXAMINER
5/6/03
For John Follansbee

Attachment for PTO-948 (Rev. 03/01, or earlier)
6/18/01

The below text replaces the pre-printed text under the heading, "Information on How to Effect Drawing Changes," on the back of the PTO-948 (Rev. 03/01, or earlier) form.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Informalities -- 37 CFR 1.85

New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the Notice of Allowability. Extensions of time may **NOT** be obtained under the provisions of 37 CFR 1.136(a) or (b) for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

2. Corrections other than Informalities Noted by Draftsperson on form PTO-948.

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

Timing of Corrections

Applicant is required to submit the drawing corrections within the time period set in the attached Office communication. See 37 CFR 1.85(a).

Failure to take corrective action within the set period will result in **ABANDONMENT** of the application.